Cost-Benefit Analysis of the Alternatives to Continuing Construction on New VA Medical Center in Denver, CO

April 21, 2015

Table of Contents

LIST OF TABLES

List of Figures

I. Executive Summary

Introduction & Budget Authority

This report contains the results of a cost-benefit analysis of alternatives to continuing construction of the U.S. Department of Veterans Affairs (VA) replacement VA Medical Center (VAMC) in Denver, Colorado. This cost-benefit analysis considers multiple alternatives, including:

- Status Quo: Stay in Place
- Alternative 1: New Construction (Continuing Construction)
- Alternative 2: Renovate & Expand
- Alternative 3: Lease
- Alternative 4: Contract Out
- Alternative 5: Acquire Existing Facility

For each alternative, a quantitative and qualitative assessment was performed.

Table 1 shows below the budget authority requested for this project based on data from the VA Office of Construction & Facilities Management. Total funding available through 2015 consists of $800 million in appropriated funds and $99.895 million which has been reprogrammed to this project.

Table 1: Budget Authority

Total Estimated Cost	Available Through 2015	Request	Future Request	Authorization Request
$1,730,000,000	$899,895,000*	$830,105,000	$0	$930,000,000

*Total funding available consists of $800 million in appropriated funds and $99.895 million which has been reprogrammed to this project.

Background & Methodology

VA is in the process of constructing a new VAMC in Denver, CO, which will consist of a new inpatient medical center, including a Spinal Cord Injury (SCI) Center, Psychiatric Residential Rehabilitation Treatment Program (PRRTP), as well as an Outpatient Clinic, a Community Living Center (CLC), a Research building, a Central Utility Plant, and parking facilities.

Authorizing the proposed change to include the PRRTP would allow for the PTSD facility to be built concurrently with the replacement hospital and would eliminate the potential problems of continuing logistical and energy services at the current hospital. The proposed change is consistent with the original plan for the new Denver VAMC replacement facility on the Fitzsimmons campus in Aurora, Colorado. It includes 20 inpatient beds and would allow the program to start serving female Veterans with five of the 20 beds be dedicated beds for female Veterans.

In support of the updated prospectus, this report contains a cost-benefit analysis of the alternatives to continuing construction. VA's approach to updating the prospectus and performing this cost-benefit analysis is summarized in the following:

1. Updated Prospectus: VA followed a similar process to that which the agency undertakes each year in completing its major lease and construction prospectuses and associated budget justification materials.
2. Cost-benefit analysis: Once the appropriate data were assembled, a financial analysis was performed using the VA Cost Effectiveness Analysis (CEA) template. Simultaneously, careful consideration was given to each of the qualitative pros and cons associated with the alternatives.

Demographics & Workload

The demographic projections are based on Denver Market FY2013 data from the VHA Office of Policy and Planning's baseline year statistics with five, 10 and 20 year forecasts. While the Denver Veteran population is projected to decrease by 25% over the next 20 years, the number of enrollees in VA medical facilities is expected to rise by 13%. Table 2 shows current demographic projections, and presents projections from the project's FY 2012 prospectus for comparison purposes.

Table 2: Demographic Projections

Current Demographic Projections[1]	2013	2018	2023	2033	Change 2013-2033
Veteran Population	306,864	286,008	266,313	231,307	-25%
Enrollees	110,966	122,557	125,932	125,293	13%
Demographic Projections from Prospectus Used for the Project in FY 2012[2]		**2009**	**2019**	**2029**	**Change 2009-2029**
Veteran Population		403,803	358,674	309,114	-23%
Enrollees		111,868	142,336	142,409	27%

[1] (V19) Denver Market – Base Year FY2013 Projections; Source: VHA Office of Policy & Planning
[2] Market Data from Eastern Rockies Market with a baseline of 2009; Source: FY 2012 VA Budget, Volume IV, Construction, Long Range Capital Plan and Appendix

Table 3 on the following page outlines current workload projections, as well as projections from the project's FY2012 prospectus.

Table 3: Workload Projections

Current Workload Projections[1]	2013	2018	2023	2033	Change 2013-2033
Acute and Sub-acute Beds	176	169	153	123	-30%
Long-term Care and SCI Beds	405	544	623	761	88%
Ambulatory Stops	762,291	900,653	991,975	1,146,174	50%
Mental Health Stops	127,476	145,381	146,821	147,643	16%
Workload Projections from Prospectus Used for the Project in FY 2012[2]			**2009**	**2029**	**Change 2009-2029**
Authorized Hospital Beds			121	92	-24%
CLC Beds			60	30	-50%
Ambulatory Stops			557,764	813,316	46%
Mental Health Stops			109,326	181,778	66%

[1] (V19) (554) Denver, CO – Base Year FY2013 Workload Projections; Source: VHA Office of Policy & Planning
[2] Market Data from Eastern Rockies Market with a baseline of 2009; Source: FY 2012 VA Budget, Volume IV, Construction, Long Range Capital Plan and Appendix

Overview of the Alternatives Considered

The cost-benefit analysis included the following alternatives (shown in Table 4):

Table 4: Overview of Alternatives

Alternative	Description
Status Quo: Stay in Place	• Remain in existing facility and address minimum number of Facility Condition Assessment (FCA) deficiencies • Contract out as needed to address unmet and growing demand
Alternative 1: New Construction (Continuing Construction)	• Continue new construction of replacement VAMC in Aurora
Alternative 2: Renovate & Expand	• Renovate existing space to fully remediate all FCA deficiencies and house outpatient and ancillary services • Acquire land proximate to existing facility and build new bed tower, CLC, PRRTP and parking
Alternative 3: Lease	• Procure build-to-suit lease for entire replacement facility in Denver market
Alternative 4: Contract Out	• Contract out all care to non-VA providers in the Denver market
Alternative 5: Acquire Existing Facility	• Acquire single existing facility of sufficient size and with sufficient parking in Denver market (if available)

Comparative Assessment

A comparison of each alternative's qualitative factors, conceptual timeline, total life cycle costs and net present value indicates that New Construction (Continuing Construction) is the preferred alternative.

The development of a new, state-of-the-art medical center would enhance Veteran health care capabilities in the Eastern Rockies market by ensuring every patient receives the fullest complement of clinical services. The expansion of Mental Health services to meet a projected workload increase of 16% over the next 20 years would support VA's targeted goal of improving Veteran wellness and economic security. Clinical education would also be significantly enhanced by increasing space to match clinical need and patient demand. The other alternatives studied in this report would not comprehensively support VA's strategic goals and objectives in a timely and efficient manner.

The qualitative benefits associated with continuing construction on the new medical facility in Aurora, CO provide the most advantages to VA of the alternatives studied in this report. The New Construction alternative would limit operational disruptions, improve quality of care, reduce wait times, and increase overall patient satisfaction. This alternative would also ensure that the new VAMC would be in close proximity to VA's medical affiliate. The other alternatives do not guarantee close proximity to VA's medical affiliate and would require either increased reliance on fee-basis care, significant operational disruption, capital lease appropriations and/or the availability of suitable properties for sale in the Denver market to be feasible.

Table 5 below shows the financial metrics and timelines associated with each alternative. Costs included in this table are discounted and measured in thousands of dollars. Relative to the other alternatives, New Construction (Continuing Construction) offers the most cost-effective option, with total life cycle costs of approximately $12.2 billion and a net present value of approximately $78.5 million.

Based on the numerous quantitative and qualitative factors reviewed in this analysis, the New Construction (Continuing Construction) alternative would deliver the most benefit to VA compared to all other scenarios.

Table 5: Side-by-Side Comparison of Alternatives (Discounted Dollars in Thousands)

	Status Quo	New Construction (Continuing Construction)	Lease	Contract Out	Renovation and Expansion
End State SF	595,372 GSF	1,262,703 GSF	935,336 NUSF (1,262,703 GSF)	0 GSF	1,000,847 GSF
Inpatient Contract Out %	37%	2%	9%	90%	9%
Outpatient Contract Out %	29%	4%	8%	89%	38%
Timeline to Completion	N/A	3 Years, 5 Months[4]	8 Years, 5 Months[4]	N/A	27 Years
Acquisition[1]	$126,269	$916,088	$136,258	$236,543	$906,398
Ancillary Services[2]	$11,699,001	$10,957,835	$11,837,775	$12,943,560	$12,101,739
Equipment and Other Items	$0	$333,631	$316,193	$0	$301,838
Total Life Cycle	$11,825,269	$12,207,554	$12,290,226	$13,180,103	$13,309,975
Total # of FTEE	2,450	3,242	3,242	162	3,242
Net New FTEE	N/A	792	792	-2,288	792
Net Present Value[5]	N/A	$78,544[3]	-$464,956	-$1,354,833	-$1,101,663[3]

Note: See Appendix C for source information associated with this table

[1]This is the total estimated cost for construction/renovation projects or medically-related alterations (lump sum payment) for leases, in discounted dollars. Note: For New Construction (Continuing Construction), this includes only the remaining construction cost and does not include funding currently available through 2015.
[2]This is defined as operating expenses, including salaries, rent and supplies (recurring costs from the CEA template).
[3]The net present value for New Construction (Continuing Construction) and renovation includes a residual value at the end of the 30-year analysis period. Residual Value was calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and non-recurring maintenance (NRM) costs over the 30-year investment period.
[4]Timeline includes a phased, 9-12 month activation period.
[5]The Net Present Value (NPV) for each alternative reflects the total discounted project value (project costs minus any residual value) relative to the status quo (as a baseline). A positive NPV indicates a lower cost compared to the status quo. A negative NPV indicates a higher cost relative to the status quo. The alternative with the highest positive NPV represents the lowest cost relative to the baseline.

II. Introduction & Budget Authority

This report contains the results of a cost-benefit analysis of alternatives to continuing construction of the U.S. Department of Veterans Affairs (VA) replacement VA Medical Center (VAMC) in Denver, Colorado. As costs have continued to increase on this large and complex construction project, VA has had to continuously evaluate the best course of action associated with the project, comparing it to all appropriate alternatives. This cost-benefit analysis considers multiple alternatives, including the status quo, or staying in place, and the costs and benefits of each of those alternatives. In addition, conceptual timelines for the alternatives were also developed. The analysis concludes with a comparative assessment of the alternatives on both a quantitative and qualitative basis.

The budget authority requested for this project based on data from the VA Office of Construction & Facilities Management is shown below in Table 6. Total funding available through 2015 consists of $800 million in appropriated funds and $99.895 million which has been reprogrammed to this project.

Table 6: Budget Authority

Total Estimated Cost	Available Through 2015	Request	Future Request	Authorization Request
$1,730,000,000	$899,895,000*	$830,105,000	$0	$930,000,000

*Total funding available consists of $800 million in appropriated funds and $99.895 million which has been reprogrammed to this project.

This budget authority request is based on the project cost summary provided by VA's Office of Construction & Facilities Management and shown in Table 7 below.

Table 7: Project Cost Summary of New Construction (Continuing Construction) Alternative

New construction*	1,130,869 gross square feet
Renovation	131,834 gross square feet
Currently Funded	
Appropriated Amount	$800,000,000
Reprogramming	$25,000,000
Reprogramming	$31,600,000
Reprogramming	$43,295,000
Total Funds	$899,895,000
Current Obligations	
Land	$60,400,000
Design	$49,500,000
CM Support	$24,200,000
Original Construction contract	$622,500,000
Interim Construction contract**	$143,295,000
Future Obligations	
New Contract between USACE and K-T	$700,000,000
Management reserve	$59,105,000
Program Management Support	$8,000,000
Subcontractor settlements	$30,000,000
Additional Construction required to get to June	$33,000,000
Total Unfunded	$830,105,000
Total Estimated Cost*	$1,730,000,000

* Includes PRRTP
** Includes $19,800,000 to be obligated when new authorization is received.
Source: VA Office of Construction & Facilities Management

III. Background

VA is in the process of constructing a new tertiary care VAMC in Denver, CO. The new facility will contain an inpatient medical center, including a Spinal Cord Injury (SCI) Center, Psychiatric Residential Rehabilitation Treatment Program (PRRTP), as well as an Outpatient Clinic, a Community Living Center (CLC), a Research building, a Central Utility Plan, and parking facilities. Authorizing the proposed change to include the

PRRTP would allow for the PTSD facility to be built concurrently with the replacement hospital and would eliminate the potential problems of continuing logistical and energy services at the current hospital. The proposed change is consistent with the original plan for the new Denver VAMC replacement facility on the Fitzsimmons campus in Aurora, Colorado. It includes 20 inpatient beds and would allow the program to start serving female Veterans with five of the 20 beds be dedicated beds for female Veterans.

The replacement of the existing Denver VA Medical Center began as an idea between the University of Colorado and VA to construct a shared facility. The project went through a protracted development period that included a concept to build a shared facility with the Department of Defense. VA requested design funds in fiscal year (FY) 2004, with an estimated project budget of $328.5 million. In 2004, then VA Secretary Principi set forth the requirement for a stand-alone VA facility on the Fitzsimmons campus. VA developed a plan for a 1.4 million square foot facility in 2006, then revised that plan to 945 thousand square feet, and subsequently requested appropriations for an $800 million project in 2010 with final funding being requested and received in 2012.

VA retained the services of an architect engineer firm (AE) to complete a design with an Estimated Construction Cost at Award (ECCA) of $582 million. The original acquisition strategy for the project was to complete 100 percent design and then solicit construction proposals to build the project. This strategy was changed to use a different contract mechanism, known in the Industry as “Early Contractor Involvement,” to bring the contractor onboard early to participate in the design. This change in acquisition strategy, intended to expedite project delivery by overlapping early phases of construction with completion of the design, was a decisive moment in the life of the project. The timing and appropriateness of this specific delivery method underlie many of the ensuing issues with the management of the project. VA entered into a contract in August 2010 with Kiewit-Turner (KT) to perform design, constructability, and cost reviews. This contract also provided an option to award the construction of the facility to the contractor.

At the time of the 2010 contract award, the design had progressed to a point that limited the opportunity for the contractor to influence the design and cost. The contractor provided pre-construction services and amid attempts at cost reconciliation with the designer, the contractor maintained that the project was over budget and could not be built for the established ECCA. The parties negotiated for a period of approximately six months to arrive at a construction contract price but differences remained. Feeling the need to finally get to construction award for the project, VA and the contractor executed an option on November 11, 2011, to build the replacement hospital, which became known as Supplemental Agreement 07 (SA-07). The total design was not 100 percent complete at the time; it was at what was deemed an “enhanced design development or roughly 65% stage.” SA-07 stated that VA would ensure that the design produced would meet the ECCA of $582.8 million and that the contractor, KT, would build the project at the firm target price of $604 million, which included pre-construction services and additional items. This was the next and probably most critical point in the project’s

evolution. VA's promise to ensure that the design produced met the ECCA became the centerpiece of diverging interpretation and conflicts between VA and the contractor. Course correction opportunities were missed because of the fundamentally different interpretation of SA-07, poor project and contract management, and the increasingly strained relationships among the parties.

KT filed a complaint with the Civilian Board of Contract Appeals (CBCA) in July 2013 that further cemented the differing perspectives on the interpretation of the contract and ultimately the cost of the project. Despite the less-than-optimal business environment during the year-and-a-half of litigation, construction quality and progress were maintained. In December 2014, VA was found in breach of contract for failure to provide a design that met the ECCA, and KT began to demobilize from the project site. VA entered into immediate negotiations with KT to stop the demobilization, recognizing the hospital was approximately 50 percent complete. Subsequently, VA entered into an interim agreement with KT to continue the project, and with the United States Army Corps of Engineers (USACE) to assess the project, and to manage all the pre-award activity related to the follow-on contract. VA intends to enter into a separate agreement with USACE to execute a new construction contract and to complete the facility once we have obtained the necessary authorization and funding.

IV. Methodology

The updated prospectus for this project includes the following:

- Demographic data;
- Current and projected operating costs;
- Estimated activation costs;
- Current and projected workload and utilization data over a five, ten, and twenty year period; and,
- Current and projected personnel needs and costs.

In support of the updated prospectus, a cost-benefit analysis for each of the alternatives to continuing construction was performed, including the following:

- Status quo;
- Renovation and/or expansion of existing space;
- Lease;
- Acquisition of an existing facility; and,
- Contracting out.

In support of this analysis, VA followed a similar process to that which the agency undertakes each year in completing its major lease and construction prospectuses and associated budget justification materials. VA Central Office, Veterans Integrated Services Network (VISN) 19, and the Denver VAMC staff worked closely together to gather the appropriate data for analysis. The current and projected workload and utilization data, along with the operating and personnel data, were carefully reviewed and evaluated for inclusion in the analysis. For the lease scenario, market research

was performed and the results of the market research were subsequently adjusted according to the approach used by the VA Office of Construction & Facilities Management Real Property Service for estimating prospectus level rental rates for VA medical leases.

Once the appropriate data were assembled, a financial analysis was performed using the VA Cost Effectiveness Analysis (CEA) template. Simultaneously, careful consideration was given to each of the qualitative pros and cons associated with the alternatives. Details underlying the analysis of each of the alternatives reviewed as well as the source of data and assumptions used are found in Section VII of this report.

V. Demographics & Workload

The demographic projections are based on Denver Market FY2013 data from the VHA Office of Policy and Planning's baseline year statistics with five, 10 and 20 year forecasts. While the Denver Veteran population is projected to decrease by 25% over the next 20 years, the number of enrollees in VA medical facilities is expected to rise by 13%. Current demographic projections are presented in Table 8 below, along with projections from the project's FY 2012 prospectus which are presented for reference purposes.

Table 8: Demographic Projections

Current Demographic Projections[1]	**2013**	**2018**	**2023**	**2033**	**Change 2013-2033**
Veteran Population	306,864	286,008	266,313	231,307	-25%
Enrollees	110,966	122,557	125,932	125,293	13%
Demographic Projections from Prospectus Used for the Project in FY 2012[2]		**2009**	**2019**	**2029**	**Change 2009-2029**
Veteran Population		403,803	358,674	309,114	-23%
Enrollees		111,868	142,336	142,409	27%

[1] (V19) Denver Market – Base Year FY2013 Projections; Source: VHA Office of Policy & Planning
[2] Market Data from Eastern Rockies Market with a baseline of 2009; Source: FY 2012 VA Budget, Volume IV, Construction, Long Range Capital Plan and Appendix

A comparison of current demographic projections with demographic projections from the project's FY2012 prospectus (with the baseline year of FY2009) shows similar declines in the projected Veteran population over the 20-year period. Previous demographic projections anticipated approximately twice the percentage increase in enrollees compared to current estimates. The FY2013 Veteran population almost matches FY2029 forecasts from the prior prospectus; however, it is important to note that the current source uses Denver Market data while the baseline statistics used for the FY2012 prospectus are for the entire Eastern Rockies Market.

As outpatient workload in the Denver market is projected to increase over the next 20 years, this project is essential to ensure that Veterans are able to access a full array of services in a timely manner. Current workload projections are similar to the workload projections from the project's FY2012 prospectus. Again, it is important to note differences in data sources and workload categories when comparing the projections. Table 9 below shows current workload projections, as well as those used in the project's FY2012 prospectus.

Table 9: Workload Projections

Current Workload Projections[1]	2013	2018	2023	2033	Change 2013-2033
Acute and Sub-acute Beds	176	169	153	123	-30%
Long-term Care and SCI Beds	405	544	623	761	88%
Ambulatory Stops	762,291	900,653	991,975	1,146,174	50%
Mental Health Stops	127,476	145,381	146,821	147,643	16%
Workload Projections from Prospectus Used for the Project in FY 2012[2]			**2009**	**2029**	**Change 2009-2029**
Authorized Hospital Beds			121	92	-24%
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Ambulatory Stops			557,764	813,316	46%
Mental Health Stops			109,326	181,778	66%

[1] (V19) (554) Denver, CO – Base Year FY2013 Workload Projections; Source: VHA Office of Policy & Planning

[2] Market Data from Eastern Rockies Market with a baseline of 2009; Source: FY 2012 VA Budget, Volume IV, Construction, Long Range Capital Plan and Appendix

VI. Overview of Alternatives

The cost-benefit analysis includes the following alternatives:

Table 10: Overview of Alternatives

Alternative	Description
Status Quo: Stay in Place	• Remain in existing facility and address minimum number of Facility Condition Assessment (FCA) deficiencies • Contract out as needed to address unmet demand
Alternative 1: New Construction (Continuing Construction)	• Continue new construction of replacement VAMC in Aurora
Alternative 2: Renovate & Expand	• Renovate existing space to fully remediate all FCA deficiencies and house outpatient and ancillary services • Acquire land proximate to existing facility and build new bed tower, CLC, PRRTP and parking
Alternative 3: Lease	• Procure build-to-suit lease for entire replacement facility in Denver market
Alternative 4: Contract Out	• Contract out all care to non-VA providers in the Denver market
Alternative 5: Acquire Existing Facility	• Acquire single existing facility of sufficient size and with sufficient parking in Denver market (if available)

VII. Alternatives Analysis

This section contains a detailed analysis of each of the alternatives considered. For each alternative, a description of the alternative is provided, followed by the key assumptions associated with the analysis, the results of the CEA, a conceptual timeline, and a summary of the qualitative pros and cons to the alternative.

A. Status Quo (Stay-in-Place)

In the Status Quo alternative, it is assumed that VA will remain in its existing facility and address the minimum number of FCA deficiencies necessary to allow for continued safe occupancy. As the existing facility does not contain sufficient capacity to meet projected workloads, VA will need to increasingly rely on fee-basis care to address excess demand.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the Status Quo alternative assumes the following:

- Remain in existing facility
- Address minimum number of FCA deficiencies by assuming the higher end of the Non-Recurring Maintenance per Square Foot (NRM/SF) cost range for acquisition costs
- Maintain personnel and operating costs at the same level as current costs
- Contract out balance of unmet need to ensure that the workload evaluated in this alternative is equivalent to the workload that can be accommodated in the other alternatives

VA will need to contract out a portion of care to non-VA providers. This analysis assumes that all surrounding VA facilities are at full capacity and that there is a sufficient number of qualified private health care providers in the surrounding area that are capable of immediately absorbing projected levels of workload.

Key assumptions used in the CEA for this alternative are presented in Table 11 below.

Table 11: Status Quo Key Assumptions

Description	Unit	Assumption (See Appendix C for Sources)
Operations Start Year	Year	2015
Beginning State Owned SF	GSF	595,372
End State Owned SF	GSF	595,372
End State Leased Square Feet	NUSF	0
Land Acquisition	Acres	0
Inpatient Contract Out %	%	37%
Outpatient Contract Out %	%	29%

Please see Appendix C for additional assumptions for this alternative.

2. Financial Analysis Results

Relative to the other alternatives, the Status Quo option of remaining at the existing Denver VA facility offers the lowest total life cycle costs, at approximately $11.8 billion. The majority of these costs are recurring expenses attributed to this alternative's increased reliance on fee-basis care. This alternative does not affect the total number of Full-Time Equivalent Employees (FTEE) and does not result in additional equipment costs. However, to understand the benefits and challenges associated with remaining in the existing facility, financial results for this alternative should be reviewed alongside the qualitative assessment. The results of the CEA for the Status Quo alternative are summarized in Table 12 below.

Table 12: Status Quo Financial Analysis

CEA Outputs (discounted dollars in thousands)		Notes (See Appendix C for source information)
Acquisition	$126,269	Total estimated NRM cost to maintain existing facility
Ancillary Services	$11,699,001	Operating expenses, including salaries, rent and supplies (recurring costs from the CEA template)
Equipment and Other Items	$0	No activation costs or new equipment costs are expected in the existing facility
Total Life Cycle	$11,825,269	The discounted value of all costs to maintain the existing medical center and accommodate the same workload as the other alternatives.
Total # of FTEE	2,450	Current number of FTEE at the existing facility
Net New FTEE	N/A	No new FTEE assumed
Net Present Value	N/A	Used to evaluate discounted costs for each alternative RELATIVE to the Status Quo. For the Status Quo alternative, this output is Not Applicable.

3. Conceptual Timeline

The conceptual timeline for this alternative assumes continued occupancy in the current Denver facility with increased reliance on fee-bases care through FY2024 and beyond. This timeline does not factor in potential disruptions to Veteran care resulting from contract negotiations with various clinics in the surrounding area or NRM projects to mitigate aging facility deficiencies. It is assumed that all required authorizations and appropriations associated with continued operations and NRM projects will occur when needed during the decision-making process. Illustrations and comparisons of the timelines for the alternatives reviewed can be found in Figure 1, "Timeline Comparisons," in Section VIII of this report.

4. Qualitative Analysis Results

Continued occupancy and operation of the existing Denver VA facility is not the preferred solution. The Status Quo alternative would not effectively support VA's strategic goals and objectives to provide high-quality, reliable and accessible care to Veterans. Table 13 summarizes the pros and cons associated with this alternative:

Table 13: Status Quo Qualitative Assessment

Pros	Cons
• Limited capital expenditures • No operational disruptions	• No improvement in quality of care or reduction of wait-times • Low patient satisfaction • Increasing reliance on fee-basis care • Requires a series of NRM projects to mitigate aging facility deficiencies • Does not locate VA care any closer to local affiliate

B. Alternative 1: New Construction (Continuing Construction)

In the New Construction (Continuing Construction) alternative, it is assumed that VA will remain in its existing facilities until construction on the new medical center is complete in December 2017, with phased activation beginning prior to construction completion. This preferred option will continue construction of a new inpatient medical center, including a SCI Center, PRRTP, as well as an Outpatient Clinic, a CLC, a Research building, a Central Utility Plant, and parking facilities in Aurora, CO on previously acquired land.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the New Construction (Continuing Construction) alternative assumes the following:

- Remain in existing facility while construction on new facility in Aurora is completed and phased activation occurs
- Address minimum number of FCA deficiencies prior to relocation
- Phased move of operations to new facility commencing in December 2017
- Excess workload that cannot be accommodated during construction will be contracted out or handled at existing VA facilities

Table 14 below shows additional assumptions used in the CEA for the New Construction (Continuing Construction) alternative.

Table 14: New Construction (Continuing Construction) Key Assumptions

Description	Unit	Assumption (See Appendix C for Sources)
Operations Start Year	Year	2019
Beginning State Owned SF	GSF	595,372
End State Owned SF	GSF	1,262,703
End State Leased Square Feet	NUSF	0
Land Acquisition	Acres	0
Inpatient Contract Out %	%	2%
Outpatient Contract Out %	%	4%

Please see Appendix B for a list of gross square footage figures used in the Denver project prospectuses each year and Appendix C for construction costs, land acquisition costs, and other assumptions for this alternative.

2. Financial Analysis Results

Relative to the other non-Status Quo alternatives, New Construction (Continuing Construction) offers the lowest total life cycle costs, at approximately $12.2 billion. While this alternative is associated with the greatest Acquisition and Equipment costs,

recurring expenses associated with Ancillary Services are lowest under the continued construction scenario despite a 792 person increase in the total number FTEE from the baseline of 2,450. This is also the only alternative associated with a positive net present value. Table 15 below summarizes the results of the CEA for the New Construction (Continuing Construction) alternative.

Table 15: New Construction (Continuing Construction) Financial Analysis

CEA Outputs (discounted dollars in thousands)		Notes (See Appendix C for source information)
Acquisition	$916,088	The remaining estimated construction costs, in discounted dollars, to complete construction of the new facility
Ancillary Services	$10,957,835	Operating expenses, including salaries, and supplies (recurring costs from the CEA template)
Equipment and Other Items	$333,631	Estimated recurring and non-recurring activation costs. Activation costs are assumed to be equal across New Construction, Lease, and Renovation alternatives (with the exception of timing)
Total Life Cycle	$12,207,554	Discounted value of costs to complete the medical center and provide medical services to Veterans within the new facility
Total # of FTEE	3,242	Estimated number of FTEE anticipated to accommodate increased level of medical services
Net New FTEE	792	Increase from the current level of 2,450 FTEE
Net Present Value	$78,544	Reflects savings relative to the Status Quo. NPV includes a residual value at end of 30-year analysis period that is calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and NRM costs over analysis period

3. Conceptual Timeline

The conceptual timeline for continued construction of the Aurora, CO VAMC is the shortest of the alternatives studied in this analysis, at approximately three years and five months. This timeline includes a 32-month construction phase, concluding in December 2017. It assumes that a phased, 9-12 month activation will be ongoing as construction completes allowing for the first day of patient care to be in late 2017 and full operations by the end of FY2018. This timeline also assumes that all required authorizations and appropriations will occur when needed during the decision-making process. The total project lifetime for construction of the Aurora, CO VAMC (from the start of construction) would be nine years and eight months under this alternative. Illustrations and comparisons of the timelines for the alternatives reviewed can be found in Figure 1, “Timeline Comparisons,” in Section VIII of this report.

4. Qualitative Analysis Results

Continued construction would effectively support VA’s strategic goals and objectives to provide high-quality, reliable and accessible care to Veterans, and therefore is the

preferred alternative. Pros and cons associated with this alternative are shown below in Table 16.

Table 16: New Construction (Continuing Construction) Qualitative Assessment

Pros	Cons
• Limited operational disruption • Improvement in quality of care and reduction in wait times • Large increases in patient satisfaction • Co-location with medical affiliate • Shortest implementation timeline	• Additional capital expenditures

C. Alternative 2: Renovate & Expand

The Renovate & Expand alternative proposes to renovate the existing Denver VAMC to accommodate outpatient and ancillary services. For this alternative to be successful, VA would need to acquire land proximate to existing facility to allow for the construction of a new bed tower, PRRTP, CLC and associated parking to meet patient demand.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the Renovate & Expand alternative assumes the following:

- Purchase land proximate to existing facility to build new bed tower, PRRTP, CLC and associated parking
- Fully renovate existing facility to address all FCA deficiencies and upgrade space to modern healthcare needs over 27-year period
- Excess workload that cannot be accommodated during the renovation will be contracted out or handled at existing VA facilities

As noted above, VA may need to contract out a portion of care to non-VA providers during the renovation and expansion. This analysis assumes that all surrounding VA facilities are at full capacity and that there is a sufficient number of qualified private health care providers in the surrounding area that are capable of immediately absorbing projected levels of workload.

Table 17 below shows additional assumptions used in the CEA for the Renovate & Expand alternative.

Table 17: Renovate & Expand Key Assumptions

Description	Unit	Assumption (See Appendix C for Sources)
Operations Start Year	Year	2019
Beginning State Owned SF	GSF	595,372
End State Owned SF	GSF	1,000,847
End State Leased Square Feet	NUSF	0
Land Acquisition	Acres	12
Inpatient Contract Out %	%	9%
Outpatient Contract Out %	%	38%

Please see Appendix C for per unit construction costs, land acquisition costs, lease rates, and other assumptions for this alternative.

2. Financial Analysis Results

Relative to the other alternatives, renovating and expanding the existing Denver VAMC to accommodate outpatient and ancillary services is associated with the second highest

Total Life Cycle cost, at approximately $12.1 billion, and the second lowest net present value, at approximately -$1.1 billion. This alternative would increase the total number of FTEE by 792, from the baseline of 2,450. Relatively high costs associated with Acquisition, Ancillary Services, and Equipment and Other Items result in this scenario requiring a comparatively large amount of capital expenditures to be viable. Table 18 below summarizes the CEA results for the Renovate & Expand alternative.

Table 18: Renovate & Expand Financial Analysis

CEA Outputs (discounted dollars in thousands)		Notes (See Appendix C for source information)
Acquisition	$906,398	Estimated construction costs to renovate and expand the existing medical center
Ancillary Services	$12,101,739	Operating expenses, including salaries and supplies (recurring costs from the CEA template)
Equipment and Other Items	$301,838	Estimated recurring and non-recurring activation costs. Activation costs are assumed to be equal across New Construction, Lease, and Renovation alternatives (with the exception of timing)
Total Life Cycle	$13,309,975	The discounted value of costs to renovate and expand the existing medical center
Total # of FTEE	3,242	Estimated number of FTEE anticipated to provide increased level of medical services
Net New FTEE	792	Increase from the current level of 2,450 FTEE
Net Present Value	-$1,101,663	Reflects a loss relative to the Status Quo. NPV includes a residual value at end of 30-year analysis period that is calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and NRM costs over analysis period

3. Conceptual Timeline

The conceptual timeline for the phased renovation and expansion scenario is the longest of the alternatives studied in this analysis at approximately 27 years. The Renovate & Expand alternative's timeline includes nine total phases with varying lengths and components. Full occupancy for this scenario does not occur until FY2043. Further, this timeline does not factor in potential disruptions to Veteran care resulting from contract negotiations with various clinics in the surrounding area during the renovation and expansion. This timeline also assumes that all required authorizations and appropriations will occur when needed during the decision-making process. Illustrations and comparisons of the timelines for the alternatives reviewed can be found in Figure 1, "Timeline Comparisons," in Section VIII of this report.

4. Qualitative Analysis Results

The renovation and expansion of the existing facility would not effectively support VA's strategic goals and objectives to provide high-quality, reliable and accessible care to

veterans; therefore, this is not the preferred alternative. A summary of the pros and cons associated with this alternative are shown below in Table 19.

Table 19: Renovate & Expand Qualitative Assessment

Pros	Cons
• Increased patient satisfaction • Improvement in quality of care and reduction in wait-times	• Additional capital expenditures • Significant operational disruptions • Longest implementation timeline • Proximity to affiliate not guaranteed

D. Alternative 3: Lease

In the Lease alternative, it is assumed that VA will procure through lease construction a new, build-to-suit inpatient medical center, including a SCI Center, PRRTP, as well as an Outpatient Clinic, a CLC, a Research building, and a Central Utility Plant with 2,242 parking spaces in the Denver, CO area. The lease of an entire Federal medical center is unprecedented in the United States. Based on OMB budgetary scoring guidelines and recent Congressional Budget Office (CBO) cost estimates that classify the lease of an entire Federal hospital and medical center as a special purpose asset built specifically for the Government that lacks a private sector market upon vacation of the facility, the Lease alternative assumes that VA will require a capital lease appropriation.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the Lease alternative assumes the following:

- Lessor to secure land and develop and manage facility for VA
- Remain in existing facility until leased facility is complete
- Address minimum number of FCA deficiencies prior to relocation
- Excess workload that cannot be accommodated during lease procurement will be contracted out or handled at other existing VA facilities

As noted above, VA may need to contract out a portion of care to non-VA providers during the lease procurement and construction process. This analysis assumes that all surrounding VA facilities are at full capacity and that there is a sufficient number of qualified private health care providers in the surrounding area that are capable of immediately absorbing projected levels of workload.

Table 20 shows the assumptions used in the CEA for the Lease alternative.

Table 20: Lease Key Assumptions

Description	Unit	Assumption (See Appendix C for Sources)
Operations Start Year	Year	2024
Beginning State Owned SF	GSF	595,372
End State Owned SF	GSF	0
End State Leased Square Feet	NUSF	935,336 (1,262,703 GSF)
Land Acquisition	Acres	0
Inpatient Contract Out %	%	9%
Outpatient Contract Out %	%	8%

Please see Appendix C for lease rates and other assumptions for this alternative.

2. Financial Analysis Results

Relative to the other alternatives, procuring a lease for an entire medical center offers a low Total Life Cycle cost that is analogous to that of the New Construction alternative; however, the Lease scenario is associated with a negative net present value, at approximately -$465 million. This alternative would increase the total number of FTEE by 792, from the baseline of 2,450. The capital lease appropriation requirement associated with this scenario provides additional uncertainty in regards to financial considerations. As a capital lease, an appropriation would be required for an amount equal to the asset (construction) cost up front. The results of the CEA for the Renovate & Expand alternative are shown in Table 21 below.

Table 21: Lease Financial Analysis

CEA Outputs (discounted dollars in thousands)		Notes (See Appendix C for source information)
Acquisition	$136,258	The present value of tenant build-out and refresher tenant build-out (at lease renewal) for the new leased facility
Ancillary Services	$11,837,775	Future lease obligations, operating expenses, salaries, and supplies (recurring costs from the CEA template)
Equipment and Other Items	$316,193	Estimated recurring and non-recurring activation costs. Activation costs are assumed to be equal across New Construction, Lease, and Renovation alternatives (with the exception of timing)
Total Life Cycle	$12,290,226	Discounted value of costs to lease a new medical center and provide medical services to Veterans within the new facility
Total # of FTEE	3,242	Estimated number of FTEE anticipated to provide increased level of medical services
Net New FTEE	792	Increase from the current level of 2,450 FTEE
Net Present Value	-$464,956	Reflects a loss relative to the Status Quo alternative.

3. Conceptual Timeline

The conceptual timeline for the Lease alternative includes three phases and spans approximately eight years and five months. This timeline includes a 32-month lease procurement phase, followed by a 60-month design and construction phase, and a phased, 9-12 month activation period that will be ongoing as construction completes. The first day of patient care would be phased in starting as early as December 2022 and the completed facilities would be fully occupied by the end of FY2023. This timeline does not factor in potential disruptions to Veteran care resulting from contract negotiations with various clinics in the surrounding area during the lease procurement and construction process. This timeline also assumes that all required authorizations and appropriations will occur when needed during the decision-making process. Illustrations and comparisons of the timelines for the alternatives reviewed can be found in Figure 1, “Timeline Comparisons,” in Section VIII of this report.

4. Qualitative Analysis Results

The leasing of a new, build-to-suit medical center does not effectively support VA's strategic goals and objectives to provide high-quality, reliable and accessible care to Veterans. Therefore, leasing a replacement facility is not the preferred alternative. A summary of the pros and cons associated with this alternative are shown in Table 22 below.

Table 22: Lease Qualitative Assessment

Pros	Cons
• Limited operational disruption • Improvement in quality of care and reduction in wait-times • Large increases in patient satisfaction • Provides flexibility if future workload shifts	• Long implementation timeline • Capital lease appropriation would be required • Proximity to affiliate not guaranteed

E. Alternative 4: Contract Out

The Contract Out alternative provides outpatient and inpatient care through various clinical contracts in the community. This alternative would result in a loss of control over Veteran health care in the Denver market. There also may not be sufficient, qualified private health care providers in market to immediately absorb all of the current and projected Veteran workload.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the Contract Out alternative assumes the following:

- Gradual contracting out of all workload
- 95% of VA staff positions terminated

In order to contract out services to address Veteran demand, there must be sufficient, qualified private health care providers in the surrounding area that are capable of immediately absorbing projected workloads.

Table 23 shows assumptions used in the CEA for the Contract Out alternative.

Table 23: Contract Out Key Assumptions

Description	Unit	Assumption (See Appendix C for Sources)
Operations Start Year	Year	2017
Beginning State Owned SF	GSF	595,372
End State Owned SF	GSF	0
End State Leased Square Feet	NUSF	0
Land Acquisition	Acres	0
Inpatient Contract Out %	%	90%
Outpatient Contract Out %	%	89%

Please see Appendix C for additional assumptions for this alternative.

2. Financial Analysis Results

Relative to the other alternatives, providing care through various clinical contracts is associated with the lowest net present value, at approximately -$1.35 billion. Despite the reduction of 95%, or 2,288, VA FTEE, this scenario contains the highest Ancillary Services expenses due to the recurring costs of contracts for fee-basis care. The Contract Out alternative's high Total Life Cycle cost is primarily driven by these increased Ancillary Services expenses, while Acquisition costs remain relatively low and costs of Equipment and Other Items are zero. The results of the CEA for the Contract Out alternative are shown in Table 24 below.

Table 24: Contract Out Financial Analysis

CEA Outputs (discounted dollars in thousands)		Notes (See Appendix C for source information)
Acquisition	$236,543	Estimated costs to transition from full service medical center to contract care including FTEE termination costs and contract start-up fees.
Ancillary Services	$12,943,560	Total cost of contract services over the 30-year investment horizon.
Equipment and Other Items	$0	This alternative does not require an investment in recurring or non-recurring activation costs.
Total Life Cycle	$13,180,103	The discounted value of all costs to contract services in the Denver market.
Total # of FTEE	162	The estimated number of FTEEs required to manage contract services in the Denver market
Net New FTEE	-2,288	Assumes a 95% reduction in clinical FTEEs from projected level of staffing required to manage workload associated with the New Construction alternative of 3,242 FTEE
Net Present Value	-$1,354,833	Reflects a loss relative to the Status Quo alternative.

3. Conceptual Timeline

The conceptual timeline for this option projects the gradual implementation of full contract care through FY2024 and beyond. This timeline does not account for potential disruptions to Veteran care resulting from contract negotiations with various clinics in the surrounding area. This timeline also assumes that all required authorizations and appropriations will occur when needed during the decision-making process. Illustrations and comparisons of the timelines for the alternatives reviewed can be found in Figure 1, "Timeline Comparisons," in Section VIII of this report.

4. Qualitative Analysis Results

Providing outpatient and inpatient care through various clinical contracts in the community would not effectively support VA's strategic goals and objectives to provide high-quality, reliable and accessible care to veterans, and therefore this is not the preferred alternative. A summary of the pros and cons associated with this alternative are shown in Table 25.

Table 25: Contract Out Qualitative Assessment

Pros	Cons
• Limited capital expenditures	• Loss of control over Veteran healthcare • Reduced patient satisfaction • Limits future sharing/collaboration opportunities • May not be sufficient, qualified private health care providers in market to immediately absorb all of the current and projected Veteran workload

F. Alternative 5: Acquire Existing Facility

This alternative would consist of the purchase of an existing facility that is suitable for renovation and able to accommodate all project requirements in the same manner as the new construction alternative. Market research in standard real estate industry databases has indicated that a single suitable facility for possible acquisition and subsequent renovation is not currently available in the Denver market (Appendix A shows relevant market research search results for Denver). Under this alternative, in order to acquire square footage equal to that of the new facility that is suitable for occupancy (based on federal standards); VA would need to purchase multiple existing buildings in different locations. This may or may not provide for proximity to VA's medical affiliate. In addition to repurposing facilities for medical use, new costs to transport patients and medical staff between the facilities would need to be considered. Multiple, disparate facility locations would also decrease operational efficiencies.

1. Key Assumptions

To meet the projected increase in outpatient workload in the Denver Market over the next 20 years, the Acquire Existing Facility alternative assumes the following:

- Existing facilities of sufficient size and parking are available for purchase in Denver market
- Some renovation to be performed on newly acquired facilities
- Increased costs to transport patients and medical staff between the acquired facilities
- Decreased operational efficiencies associated with multiple, disparate facility locations

2. Financial Analysis Results

Due to the lack of available suitable space on the market and the complexity associated with acquiring and operating multiple facilities in different locations, this alternative has been excluded from the financial analysis.

3. Conceptual Timeline

Due to the lack of available suitable space on the market and the complexity associated with acquiring and operating multiple facilities in different locations, a conceptual timeline was not developed for this alternative.

4. Qualitative Analysis Results

Due to the lack of available suitable space on the market and the complexity of the acquiring and operating multiple facilities in different locations, this alternative has been excluded from the quantitative analysis. A summary of the pros and cons associated with this alternative are shown below in Table 26.

Table 26: Acquire Existing Facility Qualitative Assessment

Pros	Cons
• Potential improvement in quality of care	• Currently no single suitable property for sale in Denver market • VA would need to purchase multiple existing buildings in different locations, which may or may not be proximate to VA's medical affiliate • Additional capital expenditures • New costs associated with the logistics of operating a split campus; the transportation of patients, medical staff, equipment, and supplies between facilities • May result in decreased operational efficiencies

VIII. Comparative Assessment

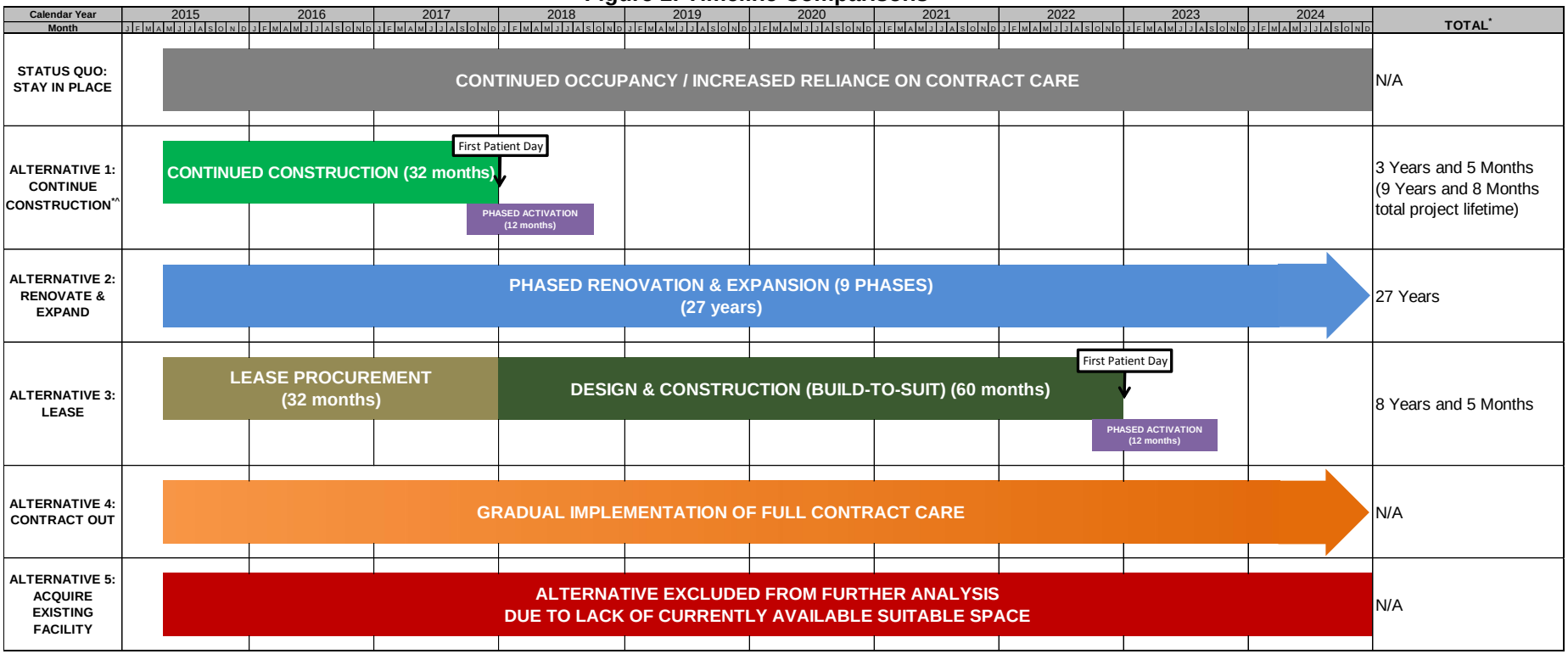
A comparison of each alternative's qualitative factors, conceptual timeline, total life cycle costs and net present value indicates that New Construction (Continuing Construction) is the preferred alternative for delivering the most benefits to VA.

The completion of the new, state-of-the-art medical center would enhance Veteran health care capabilities in the Denver market by ensuring every patient receives the fullest complement of clinical services. The expansion of Mental Health services to meet a projected workload increase of 16% over the next 20 years would support VA's targeted goal of improving Veteran wellness and economic security. Clinical education would also be significantly enhanced by increasing space to match clinical need and patient demand. The other alternatives studied in this report would not comprehensively support VA's strategic goals and objectives in a timely and efficient manner.

The qualitative benefits associated with continuing construction on the new medical facility in Aurora, CO provide the most advantages to VA of the alternatives studied in this report. The New Construction alternative would limit operations disruptions, improve quality of care, reduce wait times, and increase overall patient satisfaction. This alternative would also ensure that the new VAMC will be in close proximity to VA's medical affiliate. The other alternatives do not guarantee close proximity to VA's medical affiliate and would require either increased reliance on fee-basis care, significant operations disruption, capital lease appropriations and/or the availability of suitable properties for sale in the Denver market to be feasible.

The Figure 1 below illustrates the conceptual timeline and relevant sources for each alternative. Each timeline assumes that all required authorizations and appropriations will occur when needed during the decision-making process. Conceptual timelines for the Status Quo and Contract Out alternatives are not associated with specific total implementation periods. A timeline for the Acquire Existing Facility alternative is not included due to the lack of currently available suitable space in the Denver market (see Appendix A). Of the remaining alternatives included in the analysis, the New Construction option offers the shortest implementation timeline with a phased activation occurring as construction is completed, allowing for a first day of patient care to be in late 2017 and full operations by the end of FY2018.

Figure 1: Timeline Comparisons



* Timeline assumes that all required authorizations and appropriations will occur when needed during the process

** The construction completion date is December 2017. First day of patient care will be phased in starting as early as December 2017. It is likely to take 9-12 months to fully activate the new facility.

Alternatives	Source of Timelines
Alternative 1: Continue Construction	VA Office of Construction & Facilities Management Project Manager
Alternative 2: Renovate & Expand	VA Office of Construction & Facilities Management: Project Planning and Development, Cost Estimating and A/E Evaluating Service
Alternative 3: Lease	VA Office of Construction & Facilities Management: Real Property Service, Cost Estimating and A/E Evaluating Service
Alternative 4: Contract Out	N/A continued costs throughout lifecycle
Alternative 5: Acquire Existing Facility	N/A due to lack of currently available suitable space in Denver market (see Backup Information)

Table 27: Side-by-Side Comparison of Alternatives (Discounted Dollars in Thousands)

	Status Quo	New Construction (Continuing Construction)	Lease	Contract Out	Renovation and Expansion
End State SF	595,372 GSF	1,262,703 GSF	935,336 NUSF (1,262,703 GSF)	0 GSF	1,000,847 GSF
Inpatient Contract Out %	37%	2%	9%	90%	9%
Outpatient Contract Out %	29%	4%	8%	89%	38%
Timeline to Completion	N/A	3 Years, 5 Months[4]	8 Years, 5 Months[4]	N/A	27 Years
Acquisition[1]	$126,269	$916,088	$136,258	$236,543	$906,398
Ancillary Services[2]	$11,699,001	$10,957,835	$11,837,775	$12,943,560	$12,101,739
Equipment and Other Items	$0	$333,631	$316,193	$0	$301,838
Total Life Cycle	$11,825,269	$12,207,554	$12,290,226	$13,180,103	$13,309,975
Total # of FTEE	2,450	3,242	3,242	162	3,242
Net New FTEE	N/A	792	792	-2,288	792
Net Present Value[5]	N/A	$78,544[3]	-$464,956	-$1,354,833	-$1,101,663[3]

Note: See Appendix C for source information associated with this table.
[1]This is the total estimated cost for construction/renovation projects or medically-related alterations (lump sum payment) for leases, in discounted dollars. Note: For New Construction (Continuing Construction), this includes only the remaining construction cost and does not include funding currently available through 2015.
[2]This is defined as operating expenses, including salaries, rent and supplies (recurring costs from the CEA template).
[3]The net present value for New Construction (Continuing Construction) and Renovation includes a residual value at the end of the 30-year analysis period. Residual Value was calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and non-recurring maintenance (NRM) costs over the 30-year investment period.
[4]Timeline includes a phased, 9-12 month activation period.
[5]The Net Present Value (NPV) for each alternative reflects the total discounted project value (project costs minus any residual value) relative to the status quo (as a baseline). A positive NPV indicates a lower cost compared to the status quo. A negative NPV indicates a higher cost relative to the status quo. The alternative with the highest positive NPV represents the lowest cost relative to the baseline.

Table 27 above summarizes the CEA outputs for each alternative. Costs included in this table are discounted and measured in thousands of dollars. Relative to the other alternatives, New Construction (Continuing Construction) offers the most cost-effective option, with total life cycle costs of approximately $12.2 billion and a net present value of approximately $78.5 million. The New Construction alternative only includes new funding and is not a comprehensive sum of previous costs related to the construction of the Aurora medical facility. The Lease alternative offers comparable total life cycle costs to the New Construction alternative; however, due to its negative net present

value, extended implementation timeline and capital lease appropriation requirement, this is not the preferred alternative.

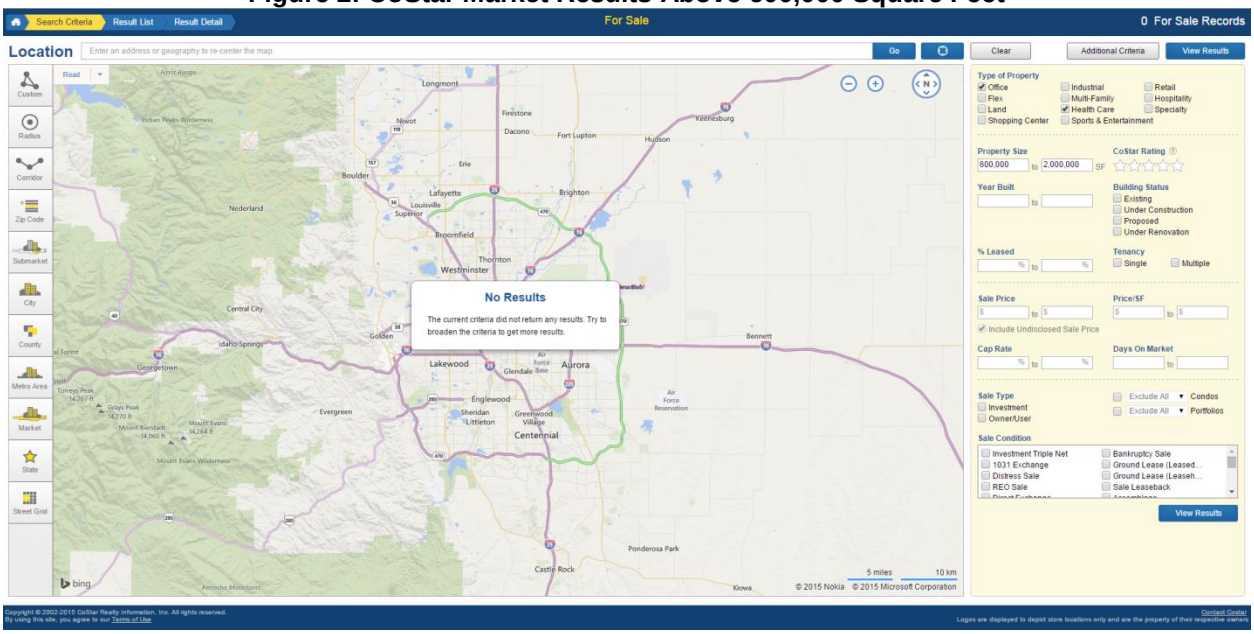
Based on the numerous quantitative and qualitative factors reviewed in this analysis, the New Construction (Continuing Construction) alternative would deliver the most benefits to VA compared to the other scenarios.

IX. Appendices

A. Market Research Results

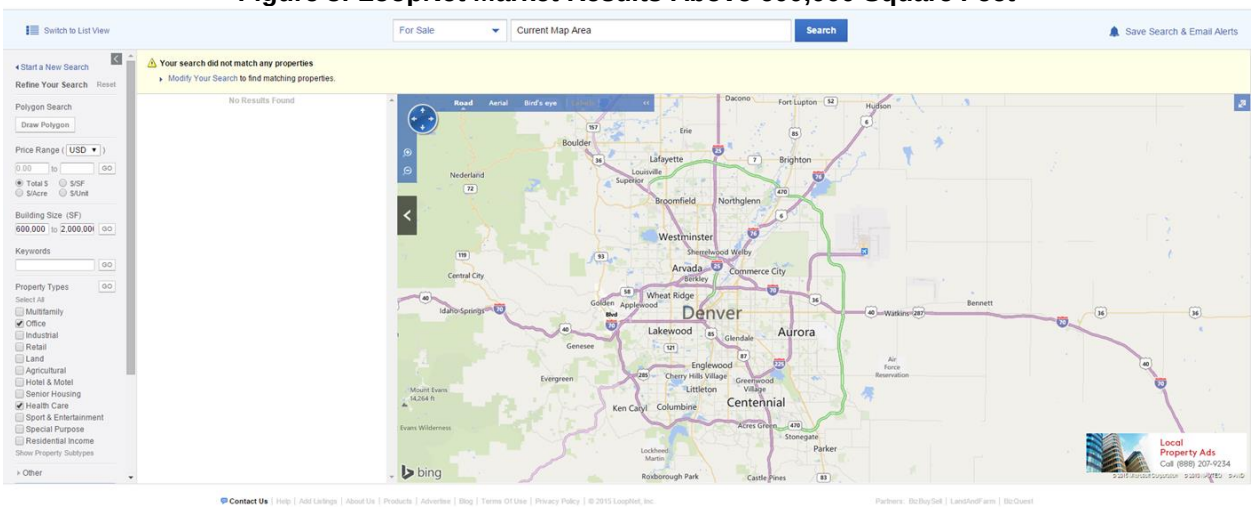
Market research in CoStar and LoopNet.com indicated that a single suitable facility for possible acquisition and subsequent renovation does not exist currently in the Denver market.

Figure 2: CoStar Market Results Above 600,000 Square Feet



Source: CoStar Realty Services

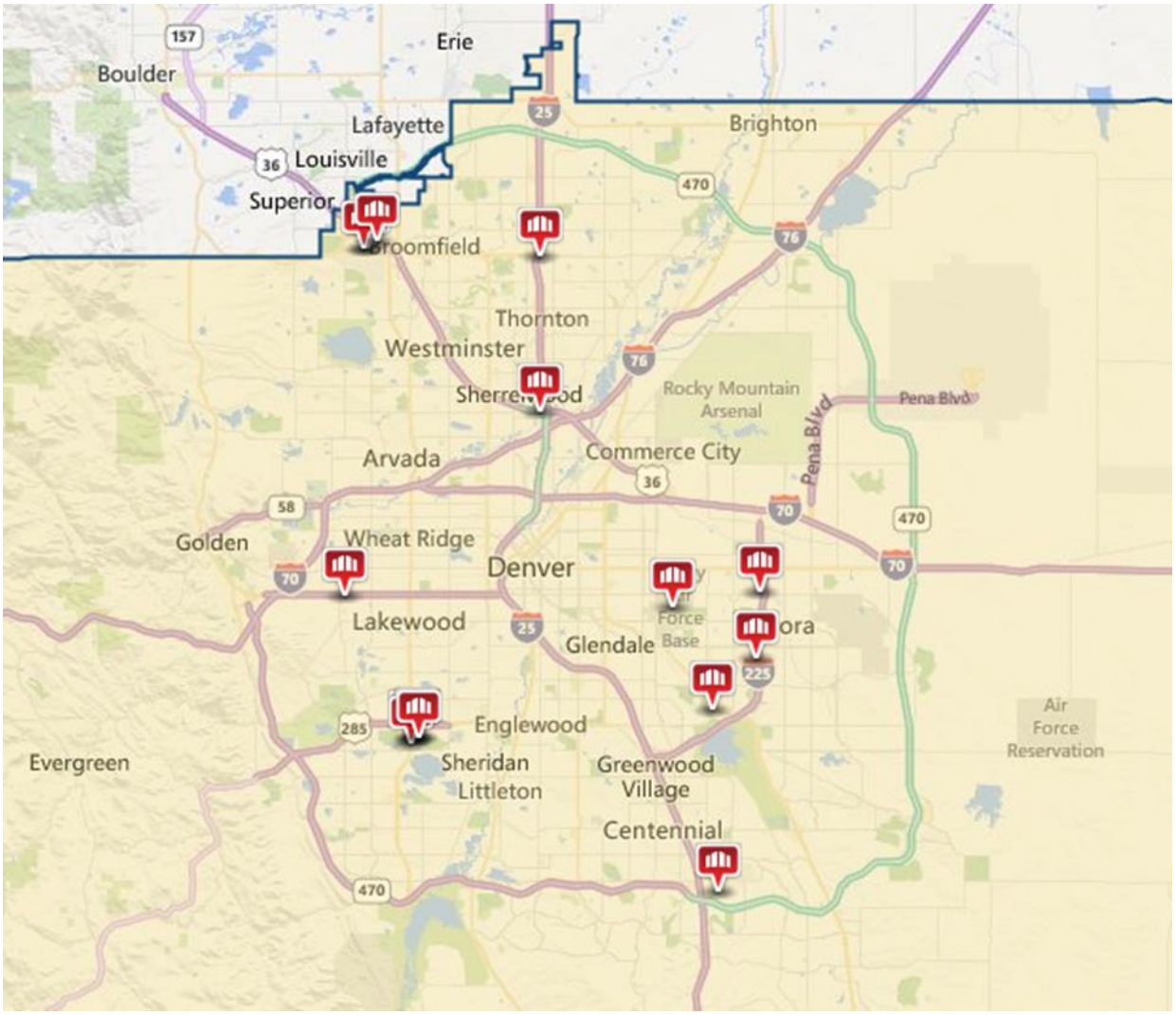
Figure 3: LoopNet Market Results Above 600,000 Square Feet



Source: LoopNet.com

Additional market research in CoStar indicated that there are 13 health care or commercial office buildings for sale between 100,000 and 291,000 square feet in size in the Denver market. Listing prices for the facilities range from $6.9 million to $40 million.

Figure 4: CoStar For Sale Listings Above 100,000 Square Feet



Source: CoStar Realty Services

B. Prospectus Square Footages and Descriptions

Fiscal Year	Description
FY2004 New GSF: 1,060,000 Renovated GSF: 0	• Joint Federal Facility at the University of Colorado's Fitzsimmons campus • New facility will accommodate the existing Eastern Colorado Healthcare System Tertiary Care functions, along with research and the medical contingent with associated workload for the Buckley Air Force Base
FY2007 New GSF: 1,400,000 Renovated GSF: 0	• New facility will accommodate the Eastern Colorado Health Care System's tertiary, secondary and primary care functions and presents the possibility of a joint VA/DoD presence • Project includes consideration of the needed collaboration with the University of Colorado Hospital in process of relocating to this new site
FY2008 New GSF: 1,293,490 Renovated GSF: 0	• New facility will accommodate the Eastern Colorado Health Care System's tertiary, secondary and primary care functions and presents the possibility of a joint VA/DoD presence • Project continues the positive collaboration with the University of Colorado by relocating to this new site and will provide funding for construction of an energy building and parking structure
FY2009 New GSF: 1,418,000 Renovated GSF: 100,000	• New facility will accommodate the Eastern Colorado Health Care System's tertiary, secondary and primary care functions and presents the possibility of a joint VA/DoD presence • Project continues the positive collaboration with the University of Colorado by relocating to this new site • Request is for a parking facility for the new medical center
FY2010 New GSF: 945,000 Renovated GSF: 90,000	• New facility will consist of a new inpatient medical center (including a Spinal Cord Injury Center), an Outpatient Clinic, a Community Living Center, a Research building, a Central Utility Plant and parking facilities • Project includes the remodeling of the recently purchased University of Physicians, Inc. building, the disposal of the current medical center campus, and the addition of renewable energy initiatives as appropriate
FY2011 New GSF: 945,000 Renovated GSF: 90,000	• New facility will consist of a new inpatient medical center (including a Spinal Cord Injury Center), an Outpatient Clinic, a Community Living Center, a Research building, a Central Utility Plant and parking facilities • Project includes the remodeling of the recently purchased University of Physicians, Inc. building, the disposal of the current medical center campus, and the addition of renewable energy initiatives as appropriate

Fiscal Year	Description
FY2012 New GSF: 945,000 Renovated GSF: 90,000	• New facility will consist of a new inpatient medical center (including a Spinal Cord Injury Center), an Outpatient Clinic, a Community Living Center, a Research building, a Central Utility Plant and parking facilities • Project includes the remodeling of the recently purchased University of Physicians, Inc. building, the disposal of the current medical center campus, and the addition of renewable energy initiatives as appropriate
Current Prospectus New GSF: 1,130,869 Renovated GSF: 131,834	• New facility will consist of a new inpatient medical center (including a Spinal Cord Injury Center), a Psychiatric Residential Rehabilitation Treatment Program (PRRTP), an Outpatient Clinic, a Community Living Center, a Research building, a Central Utility Plant and parking facilities • Project includes the remodeling of the recently purchased University of Physicians, Inc. building, the disposal of the current medical center campus, and the addition of renewable energy initiatives as appropriate

C. CEA Assumptions and Data Sources

#	Assumption	Input	Units	Source	Description
Financing and Price Escalations					
1.	Time Horizon	30	Years	CEA	30-year time horizon
2.	Discount Rate	3.0%	All Costs	OMB Circular A-94 Appendix C (Jan 2013)	Applied to all annual cash flows throughout the 30-year evaluation period.
3.	Inflation Rate	1.9%	All Costs	OMB Circular A-94 Appendix C (Jan 2013)	Implied rate inflation as the difference between nominal and real OMB discount rates.
Status Quo					
4.	Current Owned Square Footage	595,372	GSF	VA Capital Asset Inventory	Size of existing Denver VAMC
5.	Current FTEEs	2,450	FTEE	VHA, VISN 19	Current FTEEs at existing Denver VAMC
6.	Non-recurring maintenance	$8	GSF	VA Historical Averages	Due to age and condition of existing facilities, used the higher end of the NRM/SF cost range
7.	Recurring Costs	Various	Total	Calculation	Derived from in-house and fee-basis cost-per-encounter rates for VISN 19. The difference in workload between the maximum capacity of the proposed new facility and the existing facility is assumed to be contracted out in this alternative. In-house unit costs are weighted DSS averages for the facility from FY 12 inflated to FY 14, weighted to the clinical category. Fee-basis costs are the Market averages of Medicare reimbursable amounts for FY 11, inflated to FY14 found on the VSSC website.
Alternative 1: New Construction					
8.	Building Size	1,262,703	GSF	VA CFM	Size of new hospital, including an 18,130 square foot Post-Traumatic Stress Disorder Domiciliary.
9.	Operations Start Year	2018	Year	VA CFM	Based on estimated construction schedule for completing Aurora campus.
10.	NRM Start Year	2023	Year	VA CFM	5 years after the operations start year
11.	End State FTEEs	3,242	FTEE	VHA, VISN 19	Assumed End State FTE is static across New Construction, Lease, and Renovation & Expansion alternatives

#	Assumption	Input	Units	Source	Description
12.	Total Estimated Construction Costs	$830,105,000	Total	VA CFM and USACE	Total unfunded project cost; including Current Obligations and Future Obligations
13.	NRM Costs	$3	GSF	VA Historical Averages	As state-of-the-art facility will be constructed, used the lowest end of the NRM/SF cost range
14.	Activation Costs	$340,873,200	Total	VHA, VISN 19	Includes recurring and non-recurring activation costs
15.	Recurring Costs	Various	Total	Calculation	Derived from in-house and fee-basis cost-per-encounter rates for VISN 19. The difference in workload between the maximum capacity of the proposed new facility and the existing facility while construction is being completed is assumed to be contracted out in this alternative. In-house unit costs are weighted DSS averages for the facility from FY 12 inflated to FY 14, weighted to the clinical category. Fee-basis costs are the Market averages of Medicare reimbursable amounts for FY 11, inflated to FY14 found on the VSSC website.
16.	Residual Value	$636 Million	Total	Calculation	Residual Value was calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and NRM costs over the 30-year investment period.
Alternative 2: Renovate and Expand					
17.	New Construction (Expansion) GSF	500,847	GSF	VA CFM	Size of Renovation and Expansion is based on OCFM Construction Project Cost Estimate prepared on 4/6/2015
18.	Renovation of Existing Building	500,000	GSF		
19.	Demolition	58,000	GSF		
20.	New Parking Spaces	1,940	Spaces		
21.	Additional Land Acres to be Acquired	12	Acres	Estimate	Estimate of required land to construct a new CLC, swing space, bed tower, residential rehab, and 1,940 parking spaces. Assumes 10% green space with 50-foot setbacks.
22.	Operations Start Year	2019	Year	VA CFM	Renovation would be in conducted in a phased approach, with the initial phase completed in 2019.
23.	NRM Start Year	2024	Year	Estimate	5 years after the operations start year
24.	End State FTEEs	3,242	FTEE	VHA, VISN 19	Assumed End State FTE is static across New Construction, Lease, and Renovation & Expansion alternatives

#	Assumption	Input	Units	Source	Description
25.	Element 1: CLC Offside	$23,400,000	Total Estimated Contract (TEC)	VA CFM	New construction of 46K SF facility with 150 parking spaces (FY2017)
26.	Element 2: Swing Space and demo Bldg. 38	$79,700,000			New Construction of 100K SF and demolition of Bldg. 38 (30K SF) (FY 2019)
27.	Element 3: Renovate Building 1 and Replace CUP	$185,200,000			Renovation of 100K SF in Bldg. 1 (FY2023)
28.	Element 4: Renovate Building 1	$65,500,000			Renovation of 100K SF in Bldg. 1 (FY2026)
29.	Element 5: Renovate Building 1	$74,700,000			Renovation of 100K SF in Bldg. 1 (FY2029)
30.	Element 6: Renovate Building 1	$85,400,000			Renovation of 100K SF in Bldg. 1 (FY2032)
31.	Element 7: Renovate Building 1	$97,800,000			Renovation of 100K SF in Bldg. 1 (FY2035)
32.	Element 8: Renovation Swing Space for Permanent Function	$83,600,000			Renovation of 100K SF of swing space (see Phase 2) for permanent use by the VAMC (FY2038)
33.	Element 9: Demo Buildings 19 & 21	$3,000,000			Demolition of Bldgs. 19 & 21 (28K SF) (FY2041)
34.	Element 10: New Bed Tower	$345,200,000			New Construction of a 337K GSF bed tower on new land acquired by the VAMC (FY2018)
35.	Element 11: Residential Rehabilitation	$12,900,000			New Construction of an 18K GSF residential rehab center on new land acquired by the VAMC (FY2018)
36.	TOTAL RENOVATION ESIMTATE	$1,056,400,000	TEC	VA CFM	Total estimate for all 11 phases of the renovation alternative.
37.	Land Acquisition Costs for expansion facilities (see Phase 1, Phase 10 and Phase 11)	$18,300,000 ($35 per land SF)	Total	Local market comparables	Other alternative assumes expansions will require land acquisition proximate to the existing Denver VAMC. A total of 12 acres is estimated to be needed to accommodate the Bed Tower, RRTP, and CLC. Land cost per land SF is based on local market comparables and CBRE Appraisal completed in May 2014.
38.	NRM Costs	$4	GSF	VA Historical Averages	As the facility is renovated, and new state of the art expansion facilities are constructed, the Team used a lower estimate of the NRM/SF cost range
39.	Activation Costs	$340,873,200	Total	VHA, VISN 19	Includes recurring and non-recurring activation costs

#	Assumption	Input	Units	Source	Description
40.	Recurring Costs	Various	Total	Calculated	Derived from in-house and fee-basis cost-per-encounter rates for VISN 19. The difference in workload between the maximum capacity of proposed new facility and existing facility as it is renovated is assumed to be contracted out in this alternative. In-house unit costs are weighted DSS averages for the facility from FY 12 inflated to FY 14, weighted to the clinical category. Fee-basis costs are the Market averages of Medicare reimbursable amounts for FY 11, inflated to FY14 found on the VSSC website.
41.	Residual Value	$529 Million	Total	CEA Calculation	Residual Value was calculated using straight-line depreciation of the total construction cost estimates including current obligations, future obligations, and non-recurring maintenance (NRM) costs over the 30-year investment period.
Alternative 3: Lease					
42.	Lease Size	935,336	NUSF	Calculated Value	Size of leased asset equals 1,262,703 GSF used in New Construction alternative divided by 1.35 (Factor from GSF to NUSF)
43.	Operations Start Date	2023	Year	VA CFM	Year of potential activation based on estimated duration of lease procurement process, design and construction, and activation.
44.	Build Out Refreshment Year	2043	Year	VA RPS	Assumes VA will refresh the tenant build-out upon lease renewal after completion of the 20-year lease term.
45.	End State FTEEs	3,242	FTEE	VHA, VISN 19	Assumed End State FTE is static across New Construction, Lease, and Renovation & Expansion alternatives
46.	Tenant Build-Out Costs (Schedule B)	$83	$/NUSF	VA RPS	Based on guidance from OCFM - Office of Real Property Service, this alternative assumes build-out of $83/NUSF for clinical space and full build-out refreshment in FY2043, twenty years after initial occupancy of the leased asset.
47.	Land Selection, Land Option, and SFO Development	$1,150,000	Total	VA RPS	Land Selection = $150,000, Land Option = $300,000, SFO Development = $700,000
48.	Activation Costs	$340,873,200	$ Millions	VHA, VISN 19	Includes recurring and non-recurring activation costs
49.	Estimated Lease Rate	$58.38	NUSF	Local market comparables	Estimated lease rate derived from the document titled: “Rental Rate Explanation for GREX” dated November 2014

#	Assumption	Input	Units	Source	Description
50.	Capital Lease	-	-	OMB Circular A-11	Lease of an entire Federal medical center is unprecedented in the U.S., and it is assumed that a capital lease appropriation would be required
51.	Recurring Costs	Various	Total	Calculated	Derived from in-house and fee-basis cost-per-encounter rates for VISN 19. The difference in workload between the maximum capacity of proposed new facility and existing facility while lease is being procured is assumed to be contracted out in this alternative. In-house unit costs are weighted DSS averages for facility from FY 12 inflated to FY 14, weighted to clinical category. Fee-basis costs are the Market averages of Medicare reimbursable amounts for FY 11, inflated to FY14 found on VSSC website.
Alternative 4: Contract out					
52.	Operations Start Year	2017	Year	VA Estimate	Year when VA clinical operations begin transitioning to contract care in local market. In 2017, 33% of workload will be contracted out, in 2018, 67% of workload will be contracted out, in 2019, 100% of workload will be contracted out.
53.	End State Clinical FTEEs	162	FTEE	VA Estimate	Estimated number of FTEEs required to manage contract services in the Denver market.
54.	# of Terminated FTEEs	2,288	FTEE	VA Estimate	Assumes a 95% reduction in clinical FTEEs from projected level of staffing required to manage workload associated with the New Construction alternative of 3,242 FTEE
55.	Termination Cost/FTEE (Average annual cost/FTEE)	$101,136	$/FTEE	VA Paid System Average for VISN 19	Contract out alternative assumes existing FTEEs would be terminated at an estimated cost of $101,136/FTEE. Based on Office of Personnel Management Computation of Severance Pay guidelines for reduction in force, this cost accounts for any employment contract severance, relocation/permanent change of station (considering cost of living and housing), or attrition costs that may be incurred as a result of personnel reduction.
56.	Contract Start-Up Fee	10%	% of 1st Year Contract Out Expenses	VA OCAMES	This analysis assumes that in a contract out alternative, VA would incur a contract start-up expense equal to 10% of first year contract out costs including a 10% cost to oversee contracts and a 10% medical service contract premium.
57.	VA Costs to Oversee Service Contracts		% of Services,		

#	Assumption	Input	Units	Source	Description
58.	Contract Out Premium Costs		Support Services, Supplies, Personnel		